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COMPLETE SPECIFICATION.

Improvements in Motor Cycles.



I, HANS WINDHOFF, of Bülowstrasse 106, Berlin W. 57, Germany, of German nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

In motor cycles of the usual type a frame, which mostly consists of a girder-like or similar structure, is interposed between the front wheel and the rear wheel, and in this frame the engine with its accessory parts is mounted. Consequently the engine is not readily accessible, causing the user of the cycle great difficulties when repairs are required. The assembling of the cycle when being manufactured is also difficult and consequently involves expense. It has already been proposed to interpose the engine as supporting part between the front and the rear wheel. In this case the engine is mounted between two frame structures which are connected together by the engine, but even in this case the engine is not easily accessible.

The present invention approaches the problem from a totally different point of view. The engine casing has a forwardly extending cantilever part for supporting the front wheel and two rearwardly-extending struts lying right and left of the rear wheel for supporting the latter. For facilitating the assembling of the cycle, the struts of the said pairs of struts are inserted in the engine casing and are clamped in the same. This method of construction makes it possible to ensure a definite and fixed, i.e. rigid, mounting of the rear axle with respect to the engine during the manufacture of the cycle. In cases where tubular and like frame structures are used there is a liability of the frame tubes becoming deformed during the heat treatment, so that such frames have to be adapted for each single cycle. This disadvantage is done away with in the arrangement according to the present invention.

In the accompanying drawing a constructional example is shown diagrammatically. Fig. 1 is a side elevation, Fig. 2 a front elevation, Fig. 3 a plan

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view and Fig. 4 shows to an enlarged scale how one of the struts supporting the bearings of the rear wheel is clamped in the casing.

Between the front wheel 1 and the rear wheel 2 the engine 3 with the change speed gear 4 is mounted. The front wheel 1 is connected by means of the bearing sleeve 5, through a link-like part 6, to the engine casing, namely, to the cover of the same, which is itself fixed on the cylinder head of the engine 3. The rear axle 7 of the wheel 2 is journalled in two bearings 8 and 9. The latter are mounted on two pairs of struts 10 lying to the left and right of the wheel. The struts 10 (preferably tubular struts) are connected to the change speed gear 4, being clamped in the latter (see clamping arrangement shown in Fig. 4). Thus the bearings 8 and 9 form, together with the engine block and the cover of the same, one rigid structure. To the cover having a cantilever like part 6 the petrol tanks 11 and 12 and the saddle 13 are fixed. To the engine 3 are screwed the magneto 14 and the carburettor 15. The usual frame is thus eliminated. The frameless arrangement provides considerable advantages. The accessibility of the engine is in no way interfered with. Each part can be unscrewed without a frame being in the way. The manufacture is very simple, as the heat treatment of the frame is eliminated and all parts can be made by machinery.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A motor cycle in which the engine acts as the supporting part between the front wheel and the rear wheel, characterised by the feature that the engine casing has a forwardly extending cantilever part for supporting the front wheel and two rigidly clamped rearwardly extending struts lying right and left of the rear wheel for supporting the latter.

2. A motor cycle in which the engine acts as the supporting part between the front wheel and the rear wheel, character-

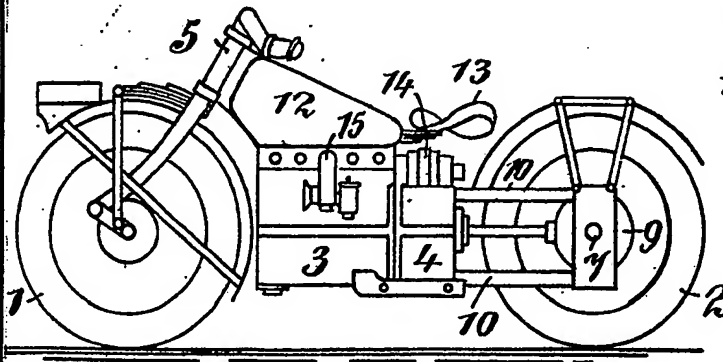
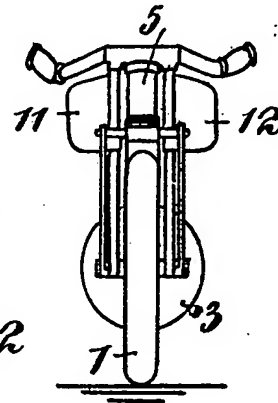
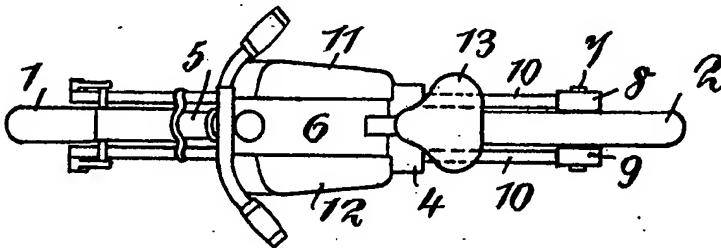
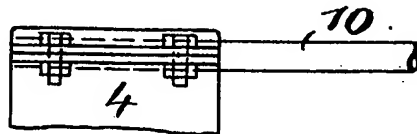
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ised by the feature that the engine and the parts connecting it to the front and rear wheel form one rigid structure. illustrated in and by the accompanying drawing.

3. The improved motor cycle, substantially as hereinbefore described and as

Dated this 10th day of December, 1927.
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Fig. 1.*Fig. 2.**Fig. 3.**Fig. 4.*

[This Drawing is a reproduction of the Original on a reduced scale.]

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